

## **RADIAL BRAGG RING RESONATOR**

### **Abstract of the Disclosure**

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A resonator structure is presented comprising a closed loop resonator having a distributed Bragg reflector for confining the light within the guiding core. In one embodiment the light is confined from both the internal and the external sides of the device forming a guiding channel (defect) or just by the external side forming a disk resonator. Although the perfectly circular shape is generally preferred, the resonator could be of any closed loop shape such as an ellipse, etc. Although not mentioned explicitly throughout the text, the Bragg reflectors can of any type of distributed reflector such as, for example, a photonic bandgap crystal where the Bragg reflector is constructed by series of holes in a dielectric material. The resonator structure can be used in various applications, such as optical filters, lasers, modulators, spectrum analyzers, wavelockers, interleaved filters, and optical add drop multiplexers.

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